

teach a variation in size of the tissue grasping surfaces of the jaws¹. The sentence at column 7, lines 3-4 is more fully explained in Paraschac's earlier description of the embodiment of Figs 5 and 6, i.e.:

The size and shape of outer electrodes 170 and 172 may be adjusted by selectively depositing more or less insulation in the transition regions of electrodes 147 and 148 respectively. Control of the size and shape of the feedback region in treated tissue may be achieved, at least in part, by controlling the size and shape of the outer electrodes, for example, by controlling the size and shape of outer electrodes 170 and 172. For the purposes of this application, outer electrodes may also be referred to as feedback or thermal spread electrodes. (column 5, lines 17-27) (emphasis added).

Although Paraschac teaches that the size of the outer electrodes may be varied, it is important to note that these are the electrode surfaces that form the visible feedback region – and are not the electrode surfaces that form the tissue grasping surfaces 118, 119. Paraschac clearly teaches the importance of feedback to the surgeon, and that the outer electrodes must have a size that creates a visible feedback region of coagulated tissue surrounding the end effector, as shown in Figure 6. (column 5, lines 44-48). By making the outer electrodes smaller, current is more focused through the tissue, causing faster coagulation.

At column 4, lines 30-37, which describes the embodiment of Figure 3, Paraschac states:

[A] small portion of the current will flow outside the region between grasping surfaces 27 and 36, coagulating tissue outside that region and providing visual confirmation of coagulation. The size and shape of the feedback region may be varied by varying the portion of outer surface 32 and 34 which are not covered by insulative coating i.e. by varying the size and location of outer electrodes 29 and 39. (emphasis added).

Paraschac expressly teaches that the outer electrodes 29 and 39 in Figure 3 must provide “the surgeon with visible evidence of coagulation” in a feedback or “coagulated region around the outside of end effector 10.” (column 4, lines 1-6, emphasis added). Thus, while the outer electrodes 29 and 39 may be varied by the extent of the insulative coating on the outer jaw surface, such outer electrodes must have a sufficient size – thus being present in some form – for providing a visible feedback region disposed outside of the jaws.

¹ It is noted that the Examiner did not address this point in the Office Action.

This teaching is also consistent with the paragraph in which the sentence that is being relied upon (at column 7, lines 3-4) appears. The first sentence of that paragraph specifically refers to “the outside of bipolar electrode jaws” and, as such, is clearly referring to the outer electrode surfaces. (column 6, lines 60-67) (emphasis added). Thus, Paraschac only teaches or suggests variations in size of the outer electrode surfaces to vary the visual feedback region and is otherwise completely silent as to any modification in size for the two wide tissue grasping surfaces of the electrodes disposed on opposed sides of the knife channel 143.

Paraschac Teaches Away From Claimed Features

It also would not be obvious to modify the size or shape of the tissue grasping surfaces of the electrodes in Paraschac. In Figure 5, Paraschac clearly requires that the electrodes must be wide enough to extend on either side of a knife-cutting channel 143 for cauterizing the tissue clamped between the jaws prior to cutting to prevent bleeding. Paraschac is completely silent that the tissue grasping surface of the electrodes may be reduced in size in any way. Further, any reduction in size of the tissue grasping surfaces of the electrodes is opposed to providing sufficient cauterization prior to cutting that avoids bleeding in the tissue after cutting.

Further, Paraschac teaches away from any modification in size of the tissue grasping surface of the electrodes for another reason. Since each of the outer electrodes is formed by a surface of the electrode, Paraschac clearly teaches that each electrode must extend to the outer surface of each jaw. In particular, in Figures 3 and 5, the tissue grasping surfaces of Paraschac's electrodes must extend to each outer jaw surface to form the outer or feedback electrode surfaces. Thus, Paraschac actually teaches away from a clamping surface having a width exclusive of the width of the tissue contacting portion of the electrode that is wider than the width of the tissue contacting portion, as in the claimed invention.

Accordingly, for all the above reasons, the claims are respectfully believed to be allowable.

Paraschac Does Not Teach Or Suggest Jaws That Are Parallel

The Examiner relies upon the end effector 210 disclosed in Figure 7 as teaching or suggesting parallel jaws. However, it is noted that the embodiment in Figure 7 does not show the entire structure of either jaw and thus is insufficient to support any teaching or suggestion of parallel jaws throughout a tissue clamping spacing, as recited

in the claims. In particular, Figure 7 lacks any connecting structure between the jaws to show how the jaws are permitted to open or close. Figure 7 shows only an exploded view of a portion of a modified end effector 210 with variations as compared to the pivotable end effectors that are shown in Figures 4 and 5 with associated structures to allow jaw pivoting. It is apparent that Figure 7 omits associated structures of the end effector that are identical to Figures 4 and 5 -- i.e., that the jaws are pivotable -- for purposes of simplification.

It is the Examiner's position that the jaws in Figure 7 of Paraschac "become parallel at different points throughout the range of motion of the jaws." However, it is unclear as to which "different points" the Examiner referring. Paraschac does not show or even mention that the end effectors in Figure 7 are moved any differently that the end effectors in Figures 4 and 5.

In fact, throughout its disclosure, Paraschac consistently teaches and suggests end effectors having only pivotable jaws such as shown in Figures 4 and 5, which use a closure tube to pivotably move the jaws relative to one another. Paraschac clearly does not disclose any other type of closure. Thus, the modified end effector in Figure 7 of Paraschac does not disclose or suggest that at least portions of the jaws are parallel through a range of tissue clamping spacing, in contrast to the claims.

Conclusion

For all the above reasons, it is respectfully requested that the claimed subject matter would not have been obvious to a person of ordinary skill in view of Paraschac. It is further respectfully requested that the pending claims as amended be reconsidered and allowed.

Respectfully submitted,

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